

Abstract Submitted
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Constraints on Low-Mass WIMP signals from CDMS KUNJ PRASAD, Texas A&M University, CRYOGENIC DARK MATTER SEARCH COLLABORATION — Dark Matter constitutes more than 80% of matter content in known universe. A major candidate to Dark Matter is Weakly Interacting Massive Particle (WIMP). The Cryogenic Dark Matter Search (CDMS) experiment uses cryogenically cooled Germanium detectors to look for recoil signals with the slow moving WIMPs in our galaxy. The most recent results optimized for high mass WIMPs yielded 2 possible candidates, which were statistically consistent with expected background. An updated analysis optimized for low mass WIMP search showed no evidence of low mass WIMPs and disfavors an explanation for the DAMA/LIBRA and CoGeNT signals in terms of spin-independent elastic scattering of low-mass WIMP. Search for annual modulation of our data shows no strong evidence of possible WIMP signature, and rejects the observation of similar phenomenon in CoGeNT at more than 95% confidence level. The next generation SuperCDMS experiment utilizing more advanced detector technology is expected to have much higher sensitivity for WIMP search with very little expected background.

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